

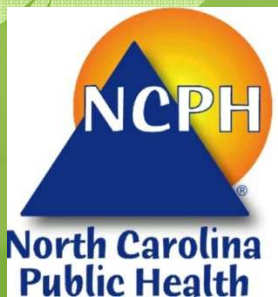
Asthma Smoke-Free Restaurants & Bars Law Study

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Disclaimer

- **The information provided is for educational purposes only**
- **Each program/funder has their own evaluation requirements and frameworks**
 - The evaluation steps and frameworks presented here might not apply to all programs
 - Refer to your program requirements for more information on evaluation needs for your program

Evaluation – What is it?

- **Systematic and continuous process to collect and analyze data to:**

- Demonstrate program is effective
- Document program accomplishments and/or failures
- Justify current funding
- Better manage limited resources
- Document process for successful replication

- **Creates a foundation for strategic planning**

- **Produces credibility and visibility**

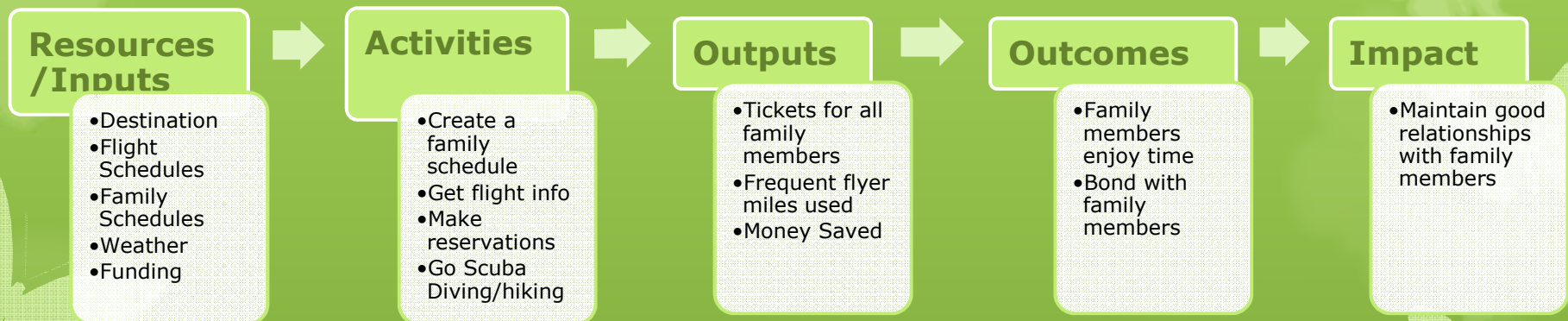


CDC's Framework for Program Evaluation



Logic Model

- o **A tool to describe the program – it is a graphic representation of the relationship between program activities and their intended effects**



CDC's Framework for Program Evaluation



Evaluation Focus (Type of Evaluation)

- **Formative - Process**

- On-going process that allows for feedback to be implemented during a program cycle
 - Examples:
 - Needs assessment
 - Implementation Evaluation
 - Process Evaluation

Evaluation Focus (Type of Evaluation)

- **Summative - Impact**

- Occurs at the end of the program and provides an overall description of program effectiveness

- Examples:

- Goal-based evaluation

- Outcome evaluation

- Impact evaluation

- Cost-effectiveness and cost-benefit analysis

An Example of Impact Evaluation

- Studying the health impact of North Carolina's Smoke-Free Restaurants and Bars Law



Smoke-free Restaurants and Bars Law

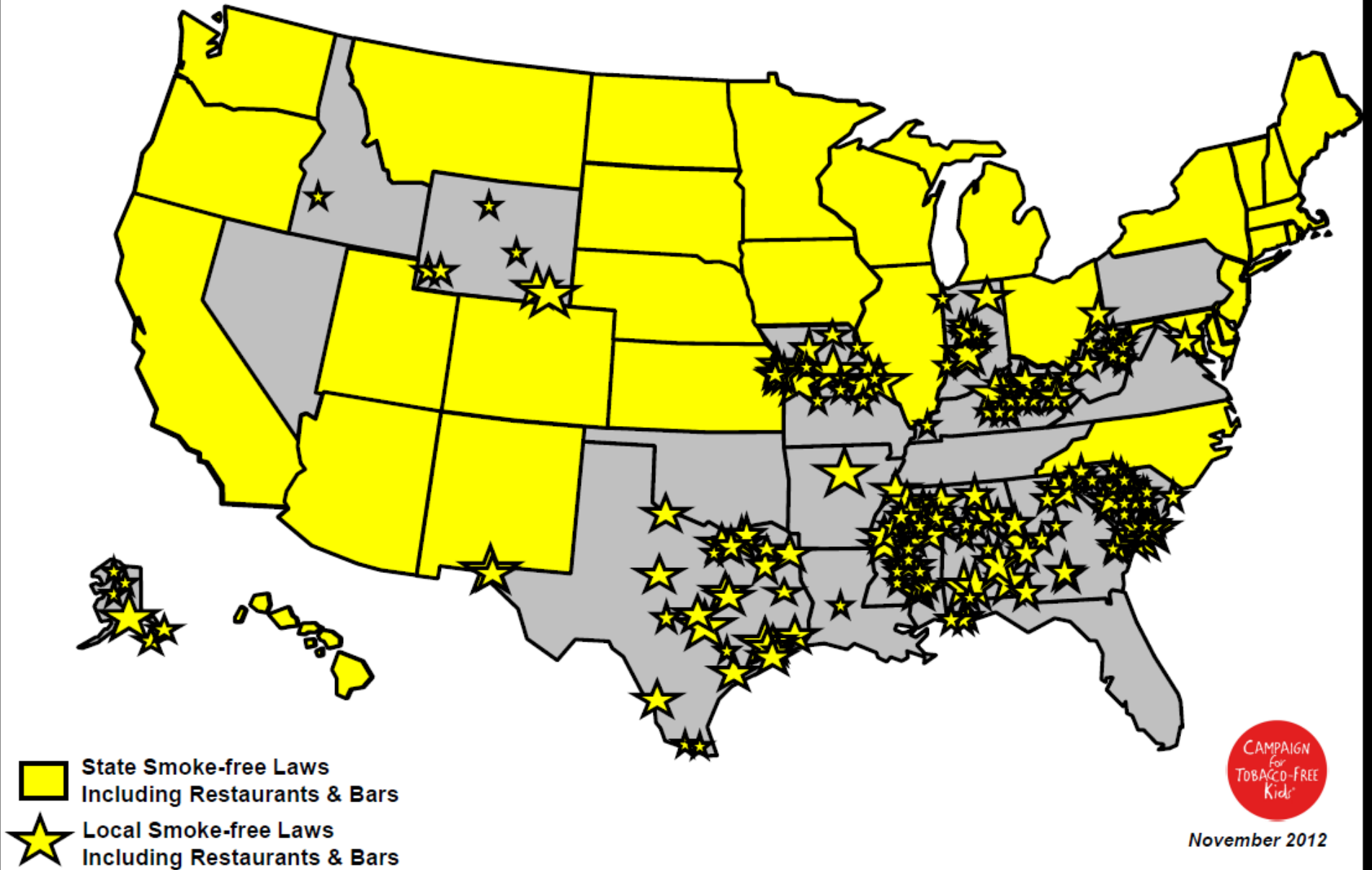
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Photo Credit: Ted Richardson
News and Observer

NC Smoke-Free Restaurants and Bars Law (SFRB Law)

- **Implemented January 2, 2010**
- Act to Prohibit Smoking in Certain Public Places and Certain Places of Employment
- Purpose:
 - Protect the health of employees and customers of restaurants and bars from serious health risks related to secondhand smoke
- **About 24,000 restaurants and bars are included in this category**
 - **About 400,000 employees (10% of state's employees)**

Smoke-Free Restaurant and Bar Laws



November 2012

Secondhand Smoke: A Toxic Soup of Chemicals and Carcinogens

- Secondhand smoke (SHS) is a poisonous mixture of more than **7,000 chemicals**, including hundreds that are toxic and at least **69 that cause cancer**.
- SHS can trigger asthma episodes and increase the severity of attacks.
- **SHS is also a risk factor for new cases of asthma in preschool-aged children.**
- The U.S. Surgeon General and public health agencies around the world have documented overwhelming evidence of the deadly effects of secondhand smoke
- **There is no safe level of exposure to secondhand smoke. Even brief exposure can trigger harmful changes in the cardiovascular system that increase risk of heart attack or asthma attack.**



What is Asthma?

Asthma

- Chronic disease of the respiratory system
- Characterized by episodes of tightening of the muscles around the airways in the lungs and swelling of the bronchial tubes
- Causes repeated episodes of wheezing, breathlessness, chest tightness, and nighttime or early morning coughing
- Asthma can be controlled

Asthma Triggers



General Irritants



- Strong chemicals
- Strong Odors
- Secondhand smoke



Allergic Triggers

- Mold and Mildew
- Warm-blooded animals
- Pests
- Dust mites
- Pollen



Burden of Asthma

Lifetime Asthma Prevalence, 2010

Children

- 383,315 (16.8%) of North Carolina children in 2010 with lifetime prevalence
- Highest prevalence among children in grades 6th to 8th

Adults

- 900,957 (12.6%) of North Carolina adults in 2010 with lifetime prevalence
- Highest prevalence among adults in the 18 to 24 age group
- Adults in households with income less than \$15,000 had the highest prevalence by annual household income

Current Asthma Prevalence, 2010

Children

- 1 out of every 10 (235,008) North Carolina children has asthma
- Nearly 26% of children with current asthma visited an emergency department or urgent care center
- 0 to 4 age group had the highest hospitalization rate among all residents

Adults

- 1 out of every 13 (534,605) North Carolina adults has asthma
- 33% of adults with current asthma visited an emergency department or urgent care center
- Adults aged 65 and over had the highest hospitalization rate among adults

Implications of SFRB and Asthma

- Children visiting restaurants are not exposed to secondhand smoke
 - Reduced risk of severe or frequent asthma attacks
 - Less coughing, wheezing, bronchitis
- Children with asthma living with parents working in restaurants and bars will breath easier around them
 - Parents might have smoke on their clothes which could trigger child's asthma

The background of the slide is a solid light green color with a subtle pattern of semi-transparent butterfly silhouettes scattered across it. The butterflies are in various orientations and sizes, creating a decorative and thematic backdrop for the text.

Evaluation Study

Impact of the Smoke-Free Restaurants and Bars Law on
Asthma ED Visits

Purpose

- Compare emergency department (ED) visits for asthma prior to and following implementation of North Carolina's Smoke-Free Restaurants and Bars Law on January 2, 2010.

Methods

- Design:
 - Pre- versus post-law comparison of Asthma ED visits
- Data:
 - Asthma ED visits by county (NC DETECT)
 - Air quality data by county (NC Division of Air Quality)
 - Average monthly temperature by county (State Climate Office of NC)
 - Allergic rhinitis ED visits by county (NC DETECT)
 - County designation as urban or rural

Analysis

- Using a statistical model to take into account asthma triggers and demographics
 - Gender
 - Age
 - Urban versus rural counties
 - Air Quality
 - Temperature
 - Allergic Rhinitis
 - Seasonal Patterns

Results

- Rate of Asthma ED visits per 1,000 population from 2008-2011

Age Group	2008	2009	2010	2011
0-4	16.3	17.3	17.6	17.9
5-9	13.8	16.3	15.2	16.9
10-14	10.0	12.0	10.6	11.8
15-17	9.0	10.4	9.3	9.6
18-24	9.9	11.2	11.2	11.6
25-34	9.2	10.1	9.4	10.0
35-44	7.8	8.4	7.7	8.2
45-54	6.8	6.8	6.5	7.0
55-64	4.7	4.6	4.3	4.4
65-74	4.7	4.3	4.0	4.2
75+	4.6	4.3	4.4	4.1
Total (Age-Adjusted)	8.7	9.4	8.9	9.4

Results Cont'd

- Adjusted Relative Risk of an Asthma ED visit post-versus pre-NC Smoke-Free Restaurants and Bars Law among North Carolina Residents.

	Relative Risk	P-value
Overall Population	0.93	<0.001
Geographic location		
Rural Counties	0.96	<0.05
Urban Counties	0.89	<0.0001
Gender		
Women	0.934	<0.001
Men	0.929	<0.001
Age		
Adults (18+)	0.96	<0.05
Children	0.93	<0.001

Conclusions

- North Carolina residents were 7% less likely to visit the ED for asthma after the law went into effect in 2010.
- The greatest decrease was seen among residents of urban counties.
- Even though we cannot attribute the decrease to the law completely, our model suggests that the law did have an impact in this decrease.

Questions?

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